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Docket No. RSPA-99-6355; Notice 3
Pipeline Safety: Pipeline Integrity Management in High Consequence Areas
Agency: Research and Special Programs Administration (RSPA), DOT.

WHY SEFBO IS QUALIFIED TO MAKE COMMENTS REGARDING PIPELINE SAFETY

SEFBO is qualified to make comments regarding the proposed rule of Pipeline Safety because of their extensive experience in the field. All of the officers and foremen at SEFBO have a ten year minimum of direct hands-on experience working and inspecting pipeline suspension bridges. Collectively, the professional staff at SEFBO has over 100 years of experience working with pipeline cable suspension bridges.

SEFBO was founded in 1992 and specializes in pipeline cable suspension bridge inspection and maintenance. Since its inception, SEFBO has performed or been involved in 350 pipeline cable suspension inspections, maintenance repairs, and construction tasks. SEFBO has been involved with pipeline cable suspension bridges and has inspected or been involved with approximately 1000 such bridges, which accounts to more than 25 percent of the total pipeline cable suspension bridges of this country. SEFBO has more than 25 years of broad structural engineering experience and has inspected and designed numerous suspension bridges, and has also performed seismic analysis and retrofit designs of many suspension bridges.

BACKGROUND

There are approximately 4000 pipeline bridges in the United States which cross over a body of water. At least one-forth of these constitute a major crossing--meaning pipeline bridges from 250 feet long to over 3,500 feet long, with pipeline diameters reaching from 6 inches to forty-two inches. Cable is a critical component in all overhead suspension crossings and demands routine maintenance such as cold galvanizing to protect its voluminous small wires, which otherwise are susceptible to rusting and eventually, breakage. Many of the Nation's suspension bridges are forty to fifty years old and have gone without proper attention. Lack of inspection and routine maintenance can result in deterioration, which will in turn lead to pipeline crossings' contaminating drinking water and other waterways. Although most major crossings in this country were constructed in the mid-1900s, they continue to be an economic and structurally sound method for pipelines to cross over bodies of water. If inspected and maintained properly, these suspension bridges can and will last another 150 years.

It is important that regulatory language clearly distinguish overhead suspension pipeline bridges as a category separate and distinct from other above ground pipeline support structures. The skills and experience required for the inspection and maintenance of cable structures are different and more sophisticated than those required for typical above

ground pipeline support structures. Inspection and maintenance of cable suspension structures are often performed at elevations of up to 300 feet above ground level. Concentration, experience and knowledge of the structures is necessary to perform tasks on pipeline bridges. Often times, maintenance and inspection is done while carrying personal safety devices, photo equipment, and while walking on pipeline or cables. Having knowledgeable and experienced personnel working on these bridges is critical to the safety of our drinking water and other waters.

The economic pressures pipeline operators face are often at odds with the incentives to maintain crossings beyond short-term economic horizons. Operators may only intend to own a pipeline for several years, such that inspecting and maintaining bridge crossings so that they remain safe and economically viable for decades may be beyond their relevant economic analysis. The recent spate of merger and acquisition activity has only served to exacerbate this problem. However, permanent damage to the pipeline overhead crossings, which are a very important part of the infrastructure of our nation, can result if inspection and maintenance is foregone in the near term. Therefore, it is imperative that government assure that the nation's environmental and safety interests are protected by requiring that the inspection and maintenance of this very important category of our national asset is conducted by qualified inspectors.

Pipeline Operator Qualification Standards, (64 Fed. Reg. 46,853) which was published on August 27 1999, does not prescribe specific training requirements for workers. Instead, the standards broadly specify that any worker performing any operating, maintenance or emergency task needs to be qualified and that all pipeline operators develop and maintain written worker qualifications, which must be approved by OPS. This essentially certifies that workers are qualified to perform the functions of their jobs. Clearly inspectors working at 300 feet above ground, who are inspecting not only the pipeline but also the cable systems and bridges need to have additional skill sets. We strongly recommend that these skills and qualifications must also be approved by OPS. . Specific qualifications are necessary to ensure proper inspection of bridges, and although someone may be an expert at inspecting pipeline, this does not necessarily make him or her an expert at inspecting overhead pipeline crossings.

The Department of Transportation's Research and Special Programs Administration released proposed rules regarding pipeline safety on April 24, 2000. "Pipeline Integrity Management in High Consequence Areas" (65 Fed. Reg. 21,695-21,710) provides a list of rules and regulations for pipeline operators of more than 500 miles of pipeline to designate what constitutes high consequence areas. The proposal, however, does not include any distinctions in overhead bridge pipelines in comparison with other pipelines, nor does it outline any special requirements for pipeline inspectors. The rule only states that evaluations must be done "by a person qualified to evaluate the results and other related data." We strongly recommend that more specific qualifications and methods of evaluation must be defined and listed in order to ensure high integrity of pipeline bridges.

A vigorous and routine inspection and maintenance program for cable suspension bridges will drastically reduce the need for additional new borings under rivers and other "high

consequence areas." A reasonable inspection and maintenance program is also consistent with the pipeline operators' interests by keeping the bridges in a structurally sound condition. Maintaining a pipeline bridge is a considerably more economical measure than boring under a river. Some incentive should be given to motivate pipeline operators to comply defined standards of inspecting and maintaining overhead suspension crossings.

The nation's interests will be best served by properly maintaining pipeline overhead crossings. Pipeline operators will have reliable and economic crossings, with a minimal failure rate. The public will not have to fear the potential disasters caused by underground crossings such as spills and leakage. From an overall perspective, the national interest will be best served if as a nation, we can properly maintain all overhead crossings.

RECOMMENDATIONS

The following points should be adopted in the final regulations:

1. Cable supported pipeline bridges should be specifically identified by OPS. The Secretary should inventory the size and location of all current overhead bridge pipelines in high consequence areas, and keep an updated list of all locations in the United States.

2. These bridges should have established maintenance and inspection standards.

3. A definition of a "qualified person" specifically for suspension bridge inspection and maintenance must be developed. A definition is critical, as knowledge and experience are the primary tools to achieve an accurate assessment of existing conditions in order to provide a program for improvements. The inspector has a rare insight to the critical components of the bridge, and can predict maintenance requirements many years out at each inspection.

4. Overhead pipeline bridge inspections must occur on regularly scheduled intervals, perhaps every five years. Inspections every three years for those bridges in areas designated by the Department of Transportation as "high consequence areas" should also be considered. Current law requires inspections each year, which is not necessary or currently administered.

Pursuant to our recommendation # 3, for the purposes of overhead bridge inspections the definition of "qualified persons" should include the two following criteria:

First, he or she needs to have direct experience of climbing up to the cable tower, which can be up to 300 feet from the ground, or walking on the pipeline crossing a river, a creek or simply a canyon, which can be up to 150 feet below the pipeline bridge. Those hours

represent approximately three years accumulated experience, and recent experience in the past six months. Most people cannot continue to function normally while operating at a high altitude. Therefore it is necessary to keep skills intact on a continuous basis.

Second, since these types of inspections have to depend on, for the most part, the inspector's visual observation and instant technical judgement he or she needs to have sound technical background to be able to render accurate assessments and reach conclusion as to what the problem is, and suggested remedy while conducting the inspection. Such experience and/or knowledge includes previous experience in steel fabrication, steel erection, pipeline structural behavior when loaded, cable suspension bridge construction and basic structural engineering fundamentals in structural behavior and the mechanical or chemical properties of such materials as painting, steel erosion and reinforced concrete.

CONCLUSION

People who inspect and maintain pipeline bridges are required to have skills that are very specific, and are not necessary to people dealing with other aboveground pipelines. There is a great deal of experience required in order to comfortably walk along cables and pipelines while at a high altitude. Not only is elevation a factor, but workers frequently need to carry photo equipment and other surveying tools along with them, which can be distracting to people who have not had adequate training.

Climbing up to cable towers, walking on pipelines above bodies of water, and walking above canyons are necessary skills for inspecting and maintaining pipeline bridges. It is critical that inspectors and other personnel that deal with pipeline bridges be properly trained and continue experience on overhead pipeline bridges in order to maintain status to work on the bridges.

Not only is it important to distinguish between 'qualified person' for overhead pipeline bridges and other aboveground pipelines, but it is also important to distinguish between pipeline bridges and other aboveground pipelines throughout any regulation that is adopted. Overhead crossings are a distinct group of pipeline support structure, and need regular inspection and maintenance. Inspection periods for overhead crossings should be three to five years, based on the size and the importance of an overhead crossing and the critical nature of the environment which an overhead crossing exposes.

Responsible maintenance programs, along with properly trained inspectors will continue the flow of a safe, clean supply of drinking water and other waters to our Nation. Not only will bodies of water show the benefits of proper pipeline management, but the costs to properly maintain pipelines is economically beneficial compared to programs that do not require routine inspections by qualified individuals.

Submitted on June 23, 2000, by Bo Bolerjack, President of SEFBO